

REMARKS

Claims 1-4 have been canceled. Claims 5-13 remain pending in the application.

Applicants amend claims 5 and 9 for further clarification. No new matter has been added.

Claims 5-13 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 7,039,687 to Jamieson et al. in view of U.S. Patent No. 6,181,697 to Nurenberg et al. Applicants amend claims 5 and 9 in a good faith effort to further clarify the invention as distinguished from the cited references, and respectfully traverse the rejection.

Claims 5 and 9 now amended have a feature of “transmitting control packets to all multicast addresses associated with VPN-IDs in a table for each virtual router in relaying apparatuses” (also see Figs. 6A, 6B & 7 and their corresponding description in the specification for exemplary embodiments thereof), in which first relaying apparatuses (edge routers) transmit control packets to all multicast addresses in the above table and second relaying apparatuses (edge routers) accept only the control packets having the multicast addresses in the same table as the first relaying apparatuses, thereby establishing virtual links using source address of each virtual router through which reply packets are returned to the first relaying apparatuses, so that VPNs are established between the virtual routers in the first and second relaying apparatuses.

Thus, the invention claimed in claims 5 and 9 now amended is definitely different from Jamieson et al. describing “interconnected bidirectional multipoint-to-multipoint LSPs used by all other PNADs (Private Network Adaptation Devices) for unicast transmission over VPN subnets,” even combined with Nurenberg et al. Applicants respectfully submit that the Examiner's interpretation in the Office Action merely consists of aggregated words.

More specifically, feature (1) in claim 5:

“first relaying apparatuses, with one or more virtual routers each of which is associated with a VPN-ID and a multicast address in a table”;

is nowhere taught nor suggested by Jamieson et al. and Nurenberg et al., being completely different from PNAD in Jamieson et al.

Feature (2) in claim 5:

“generating and multicasting control packets each of which contains a source address of each virtual router and is transmitted for the multicast address as a destination address corresponding to the VPN-ID of each virtual router”;

is nowhere taught nor suggested in Fig. 1, column 3, lines 55-67, column 4, lines 1-6, and column 5, lines 13-42 in Jamieson et al. relied upon by the Examiner, which merely describe the use of OSPF Hello packets, while Nurenberg et al. merely use the terms of multicast/unicast.

Feature (3) in claim 1:

“second relaying apparatuses, with one or more virtual routers each of which is associated with a VPN-ID and a multicast address in a table”;

is nowhere taught nor suggested by Jamieson et al. and Nurenberg et al. as with the above feature (1).

Feature (4) in claim 1:

“accepting only the control packets of the multicast address corresponding to the VPN-ID of each virtual router of the second relaying apparatuses”;

is nowhere taught nor suggested by Jamieson et al. in Fig. 1, column 3, lines 55-67, column 4, lines 1-6 relied upon by the Examiner, which merely describe interconnected bidirectional multipoint-to-multipoint LSP used to transmit multicast datagrams.

Feature (5) in claim 1:

“establishing virtual links using the source address in the control packets with the first relaying apparatuses and returning reply packets to the first relaying apparatuses through the virtual links”;

is nowhere taught nor suggested by Jamieson et al. in column 3, lines 55-59 & column 5, lines 13-52 relied upon by the Examiner, which merely describe PNAD for unicast transmission and point-to-point link. The Examiner failed to address “reply packets.”

Feature (6) in claim 1:

“whereby the virtual private network is constructed between the virtual routers that are specific to a same multicast address... with the virtual links established between all pairs of the virtual routers and with virtual interfaces receiving packets from outside the public data communication network”;

is not achieved at all by Jamieson et al. in Figs. 1 & 3; column 2, lines 31-45; column 3, lines 55-67; column 4, lines 1-4 ; column 5, lines 13-42 & 54-64 relied upon by the Examiner for the same reasons mentioned above.

In view of the foregoing, Applicants respectfully submit that the Examiner has failed to establish a prima facie case of obviousness in failing to provide any objective reasons, other than improper hindsight from the claimed invention itself, to combine the disparate features of the cited references to meet the claimed invention. Indeed, the Examiner apparently used the claimed invention as a blueprint to combine the features without providing any other objective reasons to combine them in the proposed manner.

And even assuming, arguendo, that it would have been obvious to one skilled in the art at the time the claimed invention was made to combine Jamieson et al. and Nurenberg et al., such a combination would still have failed to disclose or suggest,

“[a] virtual private network (VPN) construction system for a public data communication network comprising:
first relaying apparatuses, with one or more virtual routers each of which is associated with a VPN-ID and a multicast address in a table, generating and multicasting control packets each of which contains a source address of each virtual router and is transmitted for the multicast address as a destination address corresponding to the VPN-ID of each virtual router, and
second relaying apparatuses, with one or more virtual routers each of which is associated with a VPN-ID and a

multicast address in a table, accepting only the control packets of the multicast address corresponding to the VPN-ID of each virtual router of the second relaying apparatuses, establishing virtual links using the source address in the control packets with the first relaying apparatuses and returning reply packets to the first relaying apparatuses through the virtual links, whereby the virtual private network is constructed between the virtual routers that are specific to a same multicast address in the first and the second relaying apparatuses, with the virtual links established between all pairs of the virtual routers and with virtual interfaces receiving packets from outside the public data communication network,” as recited in claim 5.

Accordingly, Applicants respectfully submit that claim 5, together with claims 6-8 dependent therefrom, is patentable over Jamieson et al. and Nurenberg et al., separately and in combination, for at least the foregoing reasons. Claim 9 incorporates features that correspond to those of claim 5 cited above, and is, therefore, together with claims 10-13 dependent therefrom, patentable over the cited references for at least the same reasons.

In view of the remarks set forth above, this application is in condition for allowance which action is respectfully requested. However, if for any reason the Examiner should consider this application not to be in condition for allowance, the Examiner is respectfully requested to telephone the undersigned attorney at the number listed below prior to issuing a further Action.

Any fee due with this paper may be charged to Deposit Account No. 50-1290.

Respectfully submitted,

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